



# DIY Lonza FlashGel Camera Replacement

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## TOOLS:

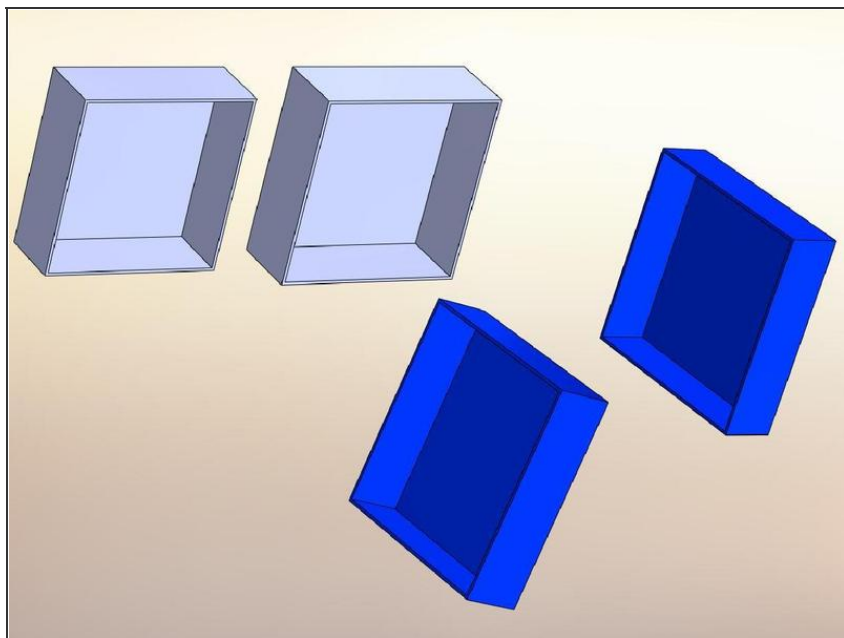
- [Razor \(1\)](#)



## PARTS:

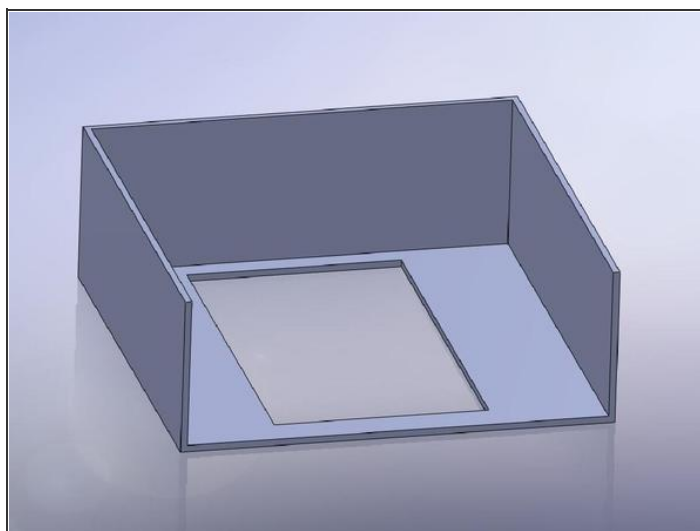
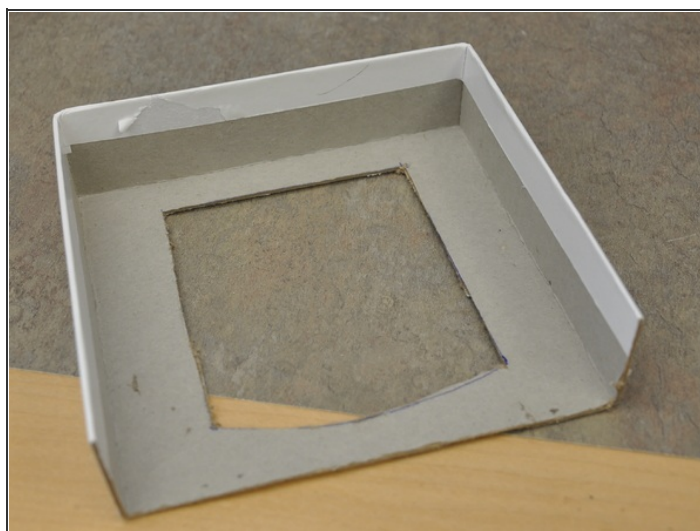
- [Freezer Box \(2\)](#)  
*Some of them have holes the bottom, preferably ones without holes. Regardless, it's easy to cover the holes up.*
- [Blackout Fabric or Blackout Foil \(1\)](#)
- [Lab Tape \(1\)](#)
- [1 Lonza FlashGel Cassette \(1\)](#)

## Step 1 — DIY Lonza FlashGel Camera Replacement



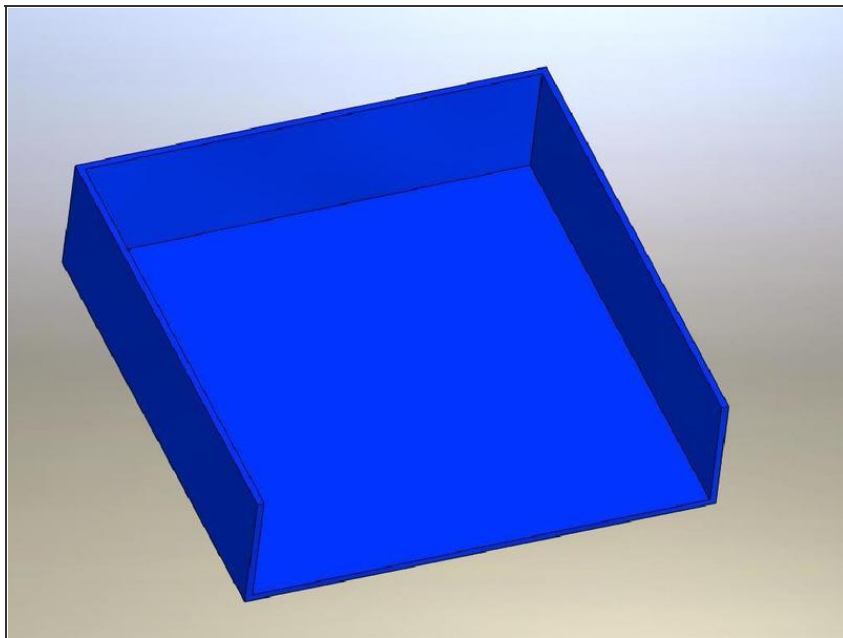
- Separate the freezer box covers and bases. The bases will be used as the sides of the camera box, and will act as barriers to prevent light from entering. One of the covers will be placed over the flash gel, the other will be to support the iPhone camera.
- In the Solidworks images used in this tutorial, the bases are blue, while the covers are grey.

## Step 2



- Take one of the cover pieces and cut out one of the side flaps. Then cut out a hole through the top face the size of the gel portion on the cassette.

### Step 3



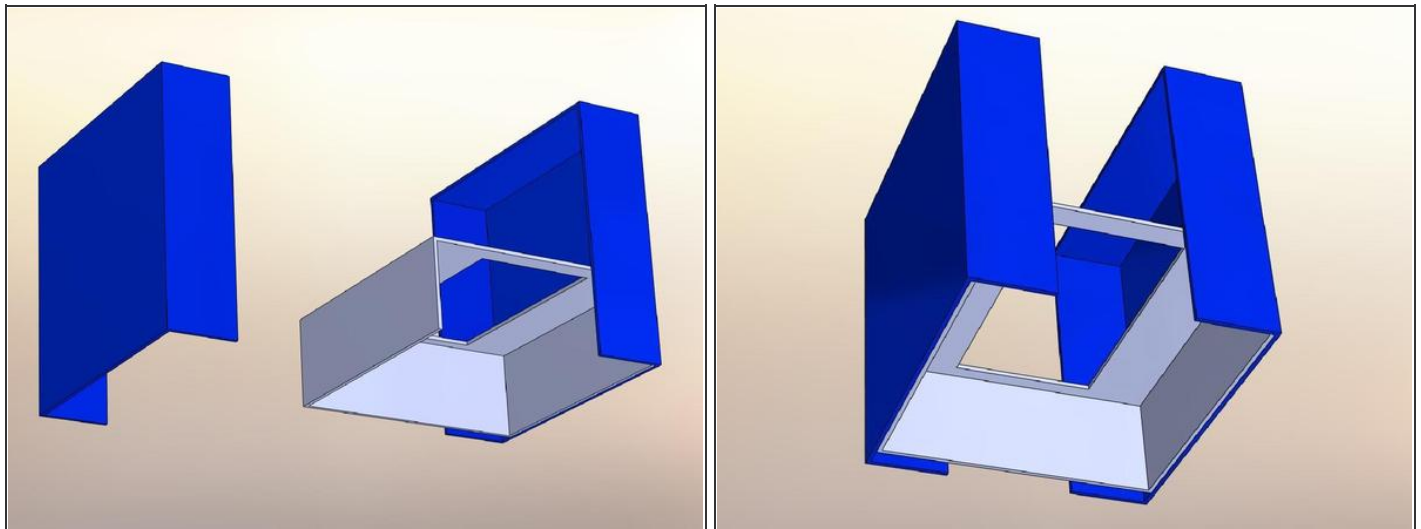
- Take both of the base pieces (blue), and cut out an edge flap, just like you did with the cover piece.

### Step 4



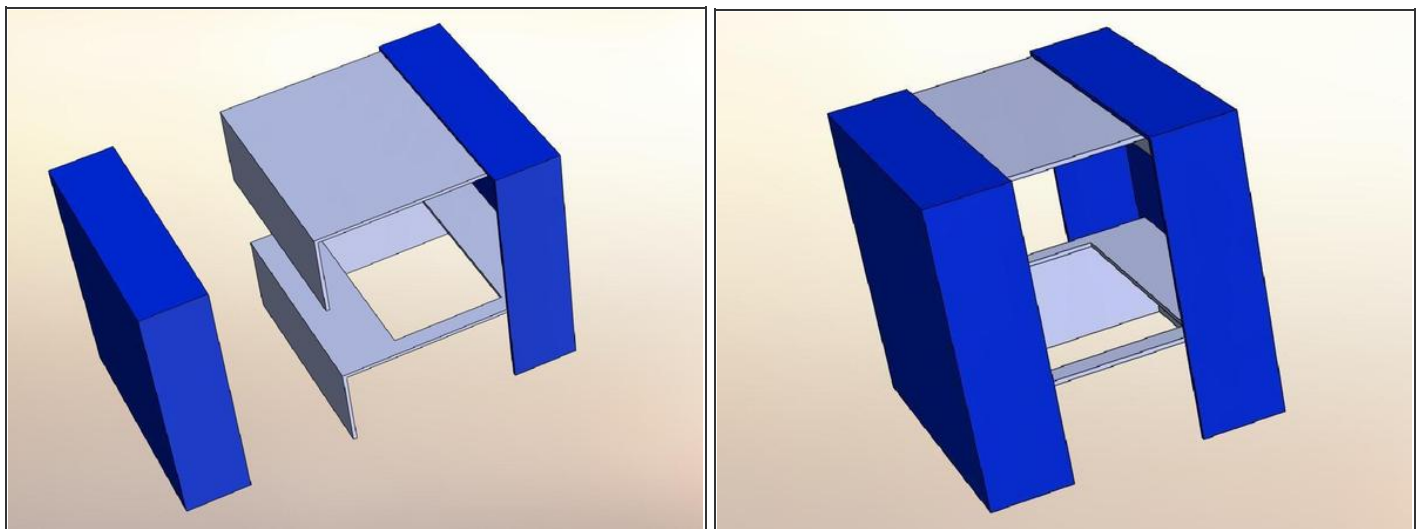
- Take the razor and cut out a rectangle as shown from the FlashGel Cassette. This piece will be a filter for the camera, to filter the blue light from the FlashGel.
- Make sure to wear gloves and take precautionary measures to prevent the contents of the cassette from spilling or getting on your skin.

## Step 5



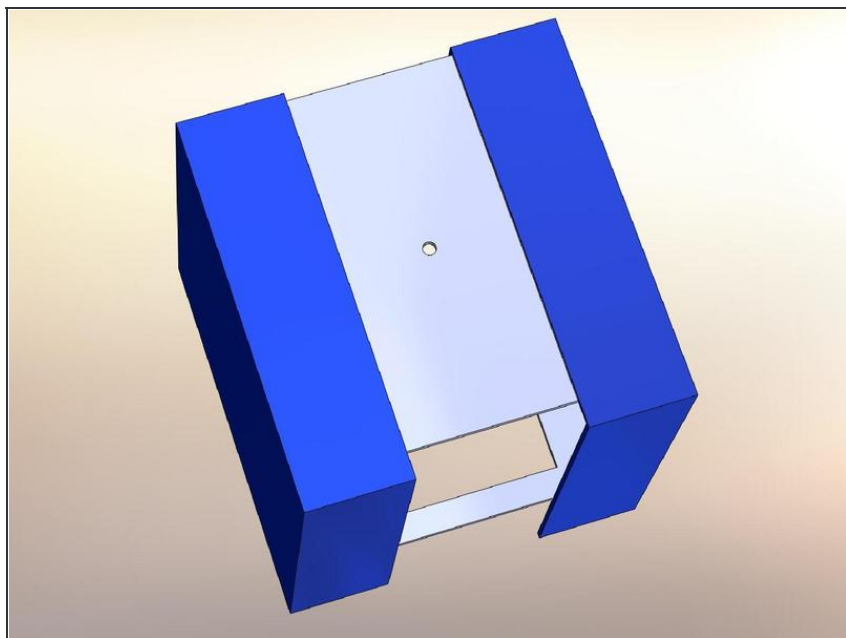
- . Attach the base piece to the sides so that the cut out side is facing towards the bottom.  
Do this for both base pieces.

## Step 6



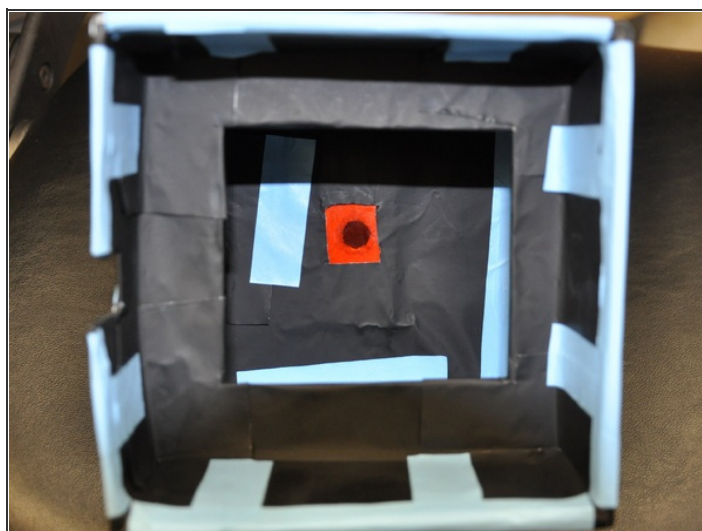
- Take the last uncut cover piece, and attach it to the inside top of box.

## Step 7



- Use tape or glue to secure the freezer boxes together.
- Then, using a sharp tipped pen, or screwdriver create a hole for the camera in the center of the top cover. For an iPhone camera, the hole should be about 1/2 an inch in diameter.

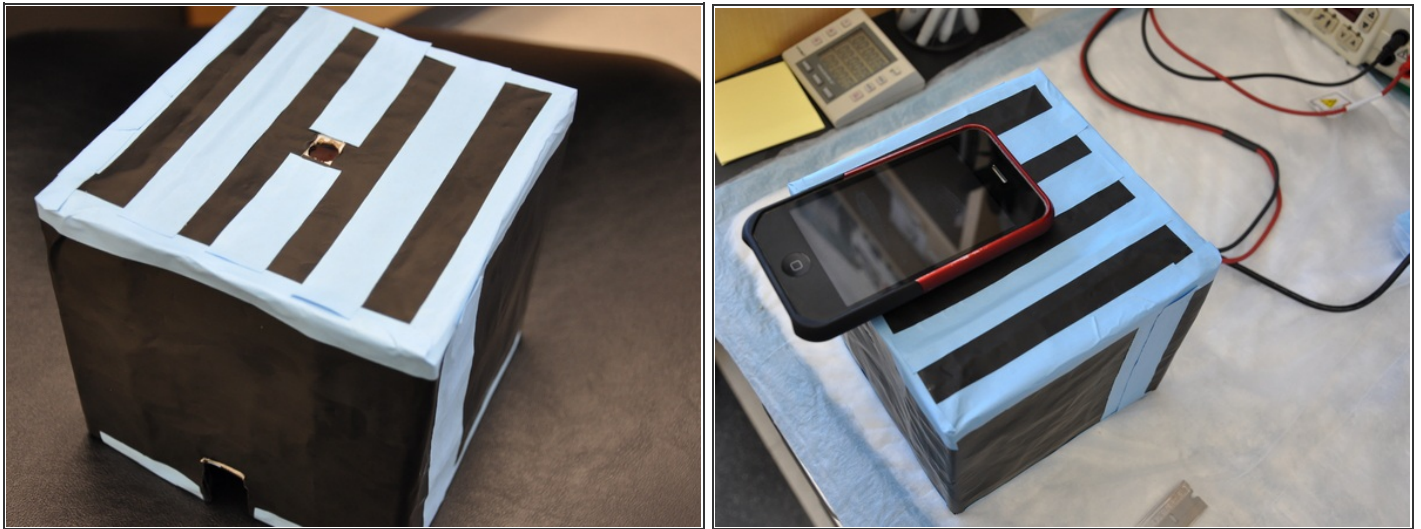
## Step 8



- Underneath the camera hole, tape the orange filter that you cut out earlier.
- Tape the blackout material all around the outside and inside of the box.
  - \*Tip: It might be easier to tape the blackout fabric onto the pieces as you attach them together.

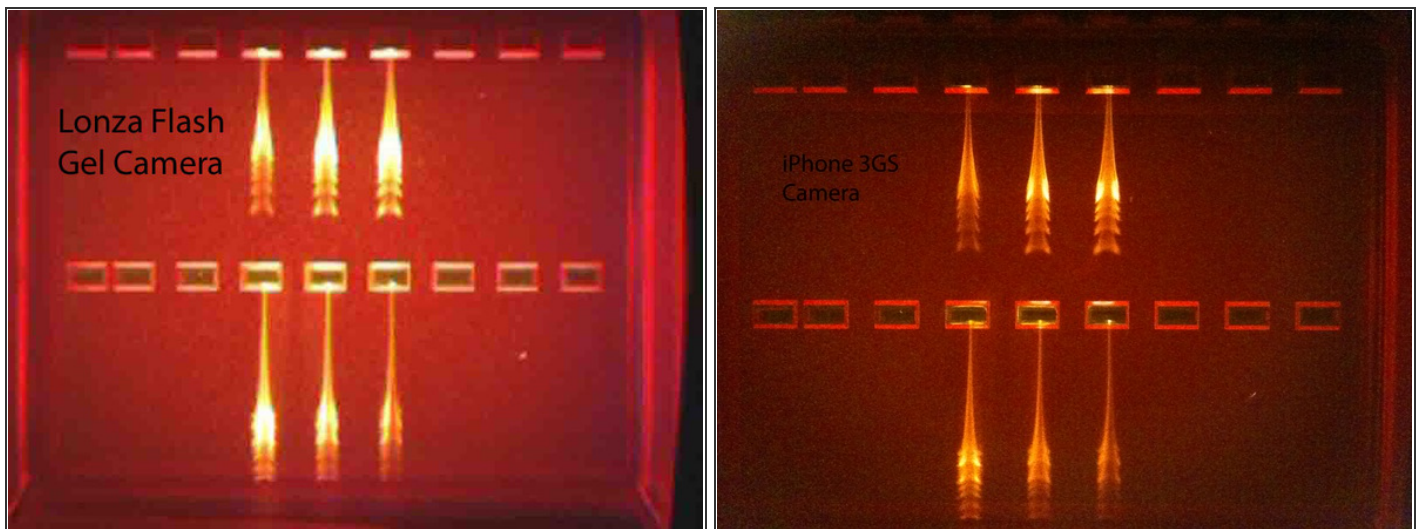


## Step 9



- Finished!

## Step 10



- A comparison of pictures taken from the FlashGel camera and from an iPhone (3GS) camera using our DIY box.
- The picture might seem a bit strange because we ran an old ladder, but its easy to see the huge difference between the two pictures.

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